

# Heating System(s) Maintenance and Upgrading Options

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It is very difficult to think about the 1990-91 greenhouse heating season as one swelters in 90°F summer and fall temperatures. In a few short months those (now idle) heating systems will be put to the test. Will they be up to the test—to efficiently and dependably provide heat to your structures? The answer must be, yes, if you are operating an efficient and profitable business.

For those of you who operate boilers, here are some reminders.

1. Clean boiler tubes.
2. Examine exhaust stacks for corrosion and leaks.
3. Check burner nozzles for wear and replace.
4. Check ignition systems.
5. Replace filters.
6. Calibrate thermostats.
7. Check burner combustion for stack temperature and CO<sub>2</sub> in exhaust air. Modern oil burners should be more than 80% efficient. Perhaps it is time to consider replacing the burner unit with a modern, efficient one.

The above suggestions were made by William Roberts (1988).

The majority of Connecticut greenhouse growers have individual house furnaces (mostly oil-fired with a few gas-fired units). Again here are some maintenance reminders. Some points will be repeated from the boiler list.

1. Examine exhaust stacks for corrosion and leaks. Replace, if in doubt.

2. Check burner nozzles for wear and replace.
3. Check ignition systems.
4. Replace filters.
5. Inspect overall furnace appearance—no physical damage evident and no obstructions blocking air inlet or discharge areas.
6. Check fan belts (no more than 1/2-inch deflection), motor shafts, bearings, and fan or blower wheels and shafts. Lubricate if applicable. Replace if worn or binding.
7. Inspect heat exchanger (gas unit) or combustion chamber (oil unit) for cracks or leaks (use plumbers candles to check for cracks in fire box).
8. Calibrate thermostats.
9. Check burner efficiency.
10. Provide adequate outside air for proper combustion. Drier outside air will also extend the life of the furnace. A rough rule of thumb is 1 sq. inch of air available for each 1000 BTU per hour burned.

Summertime is also the time to consider changing or upgrading present heating systems. Such options may include: moveable heat pipes, plastic convection tubes, small tubes for hot water (EPDM), infrared heating, coal, waste heat, heat pumps, solar considerations, thermal switches, hot water systems, bench-top heating, relocating heaters outside, and installing and maintaining a standby generator.

One must carefully evaluate each option and consider the system(s) which may be the most efficient and cost-effective for your operation.

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